



Northpower  
Electricity Network

# Northpower Approved Materials and Suppliers Standard

## Document summary

This document has been prepared for the use of outlining Northpower network’s approved materials for use by contractors constructing electricity distribution reticulation. The standard also defines the preferred supplier and alternative suppliers of the equipment.

## Document approval

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## Table of contents

<b>1.0</b>	<b>Introduction</b>	<b>8</b>
1.1	Purpose	8
1.2	Scope	8
1.3	Application	8
<b>2.0</b>	<b>References</b>	<b>9</b>
<b>3.0</b>	<b>Definitions</b>	<b>9</b>
<b>4.0</b>	<b>Technical Requirements</b>	<b>9</b>
<b>5.0</b>	<b>Network Approved Equipment</b>	<b>9</b>
5.1	Cables	10
5.1.1	Underground 4 Core Aluminium LV Cable	10
5.1.2	Underground Neutral Screened Cable	10
5.1.3	Underground Double Insulated LV Pillar Lead	10
5.1.4	Underground Double Insulated LV Single Core Copper Cable	10
5.1.5	Underground Double insulated LV Single Core Aluminium Cable	11
5.1.6	Underground 4 Core Copper LV Cable	11
5.1.7	Underground 11kV AL XLPE 3C 35mm CWS 3.3kA	11
5.1.8	Underground 11kV AL XLPE 3C 185mm CWS 10kA	11
5.1.9	Underground 11kV AL XLPE 3C 300mm CWS 13.1kA	12
5.1.10	Underground 11kV AL XL 1C 35mm CWS PVC	12
5.1.11	Underground 11kV AL XL 1C 185mm CWS PVC	12
5.1.12	Underground 11kV AL XL 1C 300mm CWS PVC	13
5.1.13	Neutral Tag	13
5.1.14	Clamps	13
5.1.15	Bandit Strap	14
5.1.16	Bandit Buckle	15
5.1.17	Signal Tape	15
5.1.18	Polymeric cable Cover	15
5.1.19	Ducting	15
5.1.20	Rayflate Duct Seal	16
5.1.21	Duct Sealing Plug	16
5.1.22	Continuous Conduit	16
5.1.23	Marker Ball	16
5.1.24	Cable Pole Guard	17
5.2	Concrete	18
5.2.1	Transformer Pads	18
5.2.2	Switch Bases	19
5.2.3	Pole Top Blocks	20



5.2.4	Pole Heel Block	20
5.2.5	Pole Sinkage Blocks	21
5.3	Conductors	22
5.3.1	Bare Aluminium Conductors	22
5.3.2	Bare Copper Conductors	23
5.3.3	Overhead Covered Copper Conductor	23
5.3.4	Overhead Aerial Bundled Conductor	23
5.3.5	Preformed	23
5.3.6	Armour Rods	24
5.3.7	Distribution Ties	24
5.3.8	Vibration Dampers	24
5.3.9	Binder Wire	25
5.4	Connectors	26
5.4.1	Mini Wedge (for TUDS Pit)	26
5.4.2	Insulation Piercing Connectors (IPC)	26
5.4.3	Ampact Connectors	28
5.4.4	Gelpact Covers	29
5.4.5	Non Tension Aluminium Compression Sleeves	29
5.4.6	Full Tension Aluminium Compression Sleeves	29
5.4.7	Copper Full and Non Tension Sleeves	29
5.4.8	Cap Joint	30
5.4.9	Line Taps/Split Bolt Connectors/HD connectors	30
5.4.10	Submersible Connectors	30
5.4.11	LV Shearbolt Connectors	31
5.5	Crossarms	32
5.5.1	Wood	32
5.5.2	Steel	32
5.5.3	Pole tops	32
5.5.4	Delta	32
5.6	Earthing	33
5.6.1	Earth Rod	33
5.6.2	Earth Grid Connector	33
5.6.3	Earth Rod Coupling	34
5.6.4	Earth Rod Star Tip	34
5.6.5	Inspection Box	34
5.7	Fusing	34
5.7.1	63A Fuse Carrier	34
5.7.2	32A Front Wire Fuse	35
5.7.3	Submersible Fuse Carrier	35



5.7.4	Underground Horizontal 160A Fuse Disconnect	35
5.7.5	Underground Horizontal 250A Fuse Disconnect	36
5.7.6	Underground Horizontal 400A Fuse Disconnect	36
5.7.7	Underground Horizontal 630A Fuse Disconnect	36
5.7.8	Underground Vertical 160A Fuse Disconnect	37
5.7.9	Underground Vertical 250A Fuse Disconnect	38
5.7.10	Underground Vertical 400A Fuse Disconnect	39
5.7.11	Underground Vertical 630A Fuse Disconnect	41
5.7.12	LV Frames	42
5.7.13	Overhead 100A Fuse Carrier	44
5.7.14	Replacement IPC Bolt	44
5.7.15	Overhead 160A Fuse Carrier	45
5.7.16	Overhead 400/630A Fuse Carrier	45
5.7.17	DIN Fuses	45
5.7.18	Barrel Fuses	46
5.7.19	32A Off-Set Tag Fuse Cartridge	46
5.7.20	63A Off-Set Tag Fuse Cartridge	47
5.7.21	Phase Bars	47
5.7.22	HV Cutout	47
5.7.23	HV Fuse Link	47
5.8	Insulators	49
5.8.1	LV Small Bobbin	49
5.8.2	LV Medium Bobbin	49
5.8.3	Shackle Strap	49
5.8.4	U Shackle Large	49
5.8.5	Stand Off Insulator	50
5.8.6	LV Insulator (Round Top)	50
5.8.7	LV Insulator Pin	50
5.8.8	11kV Tie Top Pin Insulator	51
5.8.9	HV Insulator Pin	51
5.8.10	HV Tie Top Post Insulator	51
5.8.11	HV Pedestal Insulator	52
5.8.12	33kV Tie Top Post Insulator	52
5.8.13	K-Line Insulator	52
5.8.14	11 kV HV Polymer Strain	53
5.8.15	33kV Polymer Strain	53
5.8.16	Copper Thimble	53
5.8.17	Aluminium Thimble	53
5.9	Overhead Accessories	54
5.9.1	Bolts	54
5.9.2	Treaded Rod	54
5.9.3	Arm Brace (Flat)	54
5.9.4	Arm Brace (Angle)	54
5.9.5	Galvanised Washer (Round)	54



5.9.6	Stainless Bolts (316)	55
5.9.7	J-Bolt	55
5.9.8	Surge Arrestors	55
5.9.9	Crucifix Bracket	56
5.9.10	Eye Bolt Connector	56
5.9.11	ABC Fittings	56
5.10	Pillars and Pits	58
5.10.1	EP4 Pillar	58
5.10.2	EP3 Pillar	58
5.10.3	EP2 Pillar	58
5.10.4	TUDS Pit	58
5.10.5	Link Pillar Cabinet	58
5.10.6	U-Pillar	59
5.11	Locks	60
5.11.1	Pad Locks	60
5.11.2	Cylinder Locks (Round or Oval)	60
5.12	Poles	60
5.12.1	Pre-stressed	60
5.12.2	Engineered Cement	61
5.12.3	Possum Guard	61
5.13	Relays	62
5.13.1	Recloser Relays	62
5.14	Substations (To be added at a later date)	62
5.15	11kV Switchgear	63
5.15.1	Ground Mounted Ring Main Units	63
5.15.2	Pole Mounted Reclosers	63
5.15.3	Pole Mounted Gas Switches	64
5.15.4	Knife Links	64
5.15.5	Pole Mounted Switch Brackets	65
5.16	11kV Joints and Terminations	66
5.16.1	Straight Joints	66
5.16.2	Transition Joints	66
5.16.3	Indoor Terminations	66
5.16.4	Outdoor Terminations	67
5.16.5	Screened Elbows	68
5.16.6	Bushing Boots	69
5.16.7	Cable Glands	70



5.16.8	Screen Kits	70
5.17	33kV Cable Joints and Terminations	71
5.17.1	Straight Joints	71
5.17.2	Indoor Terminations	71
5.17.3	Outdoor Terminations	71
5.17.4	Screened Elbows	72
5.18	Transformers	74
5.18.1	Pole Mount	74
5.18.2	Ground Mount Micro	75
5.18.3	Ground Mount Minipad	75
5.18.4	Ground Mount Building	75
5.18.5	Isolating Transformer	76
5.18.6	Transformer Guards	76
5.19	Breach Joint	77
5.19.1	Breach Joint	77
5.20	Lugs	77
5.20.1	Compression Lugs	77
5.21	Heatshrink Tubing, Breakout Boots and Endcaps	78
5.21.1	Heatshrink Tubing	78
5.21.2	Breakout Boots	78
5.21.3	End Caps	78
5.22	Guys/Stays	79
5.22.1	Guy Bobbin & Guy Strain (11kV)	79
5.22.2	Guy Bobbin & Guy Strain (33kV)	79
5.22.3	Guy Wire	79
5.22.4	Bull Dog Clamp	80
5.22.5	Screw Anchor	80
5.22.6	Eye Bolt	80
5.22.7	Guy D Ring	80
5.22.8	Guy Split Hose	80
5.22.9	Guy Preform	81
5.23	Labels	81
5.23.1	Labels	81
<b>6.0</b>	<b>Network Unapproved Equipment</b>	<b>82</b>
6.1	11kV Switchgear	82





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6.1.1	Knife links	82
6.2	11kV Cables	82
6.2.1	Single Core 25mm <sup>2</sup> Al Copper Tape Screen	82
<b>7.0</b>	<b>Document Review History</b>	<b>83</b>
	<b>Appendices</b>	<b>84</b>
	<b>Appendix A – IPC Usage Chart</b>	<b>84</b>
	<b>Appendix B – Ampact Chart</b>	<b>85</b>



## 1.0 Introduction

### 1.1 Purpose

This standard provides Northpower network requirements for equipment that is approved to be used for construction and maintenance of the network. The standard also defines the preferred supplier of the equipment

**Note:** This standard predominately consists of low voltage equipment and hardware. Further equipment will be added over time therefore the printing of this document is strongly discouraged.

### 1.2 Scope

The scope of this standard relates to:

- a) All equipment used for the distribution of electricity on the Northpower network
- b) Associated hardware where applicable

Exclusions:

- a) Minimum stock levels required to be held for general stores and critical spares

### 1.3 Application

This standard applies to all equipment purchased and used by any service provider. The standard also applies to the preferred supplier/manufacturer.

Where there is only one supplier listed that is not to say there are not alternative suppliers. Supplier agreements can change without notice. However, every effort to keep this standard up to date will be made by the Northpower Network.







## 2.0 References

Internal Reference	Details
Electricity Reticulation Design Standard	Northpower networks requirements for the design of electricity distribution infrastructure to be connected to Northpower's network.

External Reference	Details
NA	

## 3.0 Definitions

Terminology	Definition
NA	

## 4.0 Technical Requirements

Manufactures specifications shall be used for technical referencing.

Where there is no Northpower Network specific technical data good industry practice shall also be used.

## 5.0 Network Approved Equipment

**Note:** This standard is a working document and extra information will be added as and when required.



### 5.1 Cables

Name	Image	Material	Make	Model	Supplier	Notes
5.1.1 Underground 4 Core Aluminium LV Cable		Aluminium	Prysmian	Northpower Spec Sector Cable as specified by design 4C 120mm, 185mm, 300mm	Prysmian	
		Aluminium	Nexans	Northpower Spec Sector Cable as specified by design 4C 120mm, 185mm, 300mm	Nexans	
5.1.2 Underground Neutral Screened Cable		Copper	Nexans	Northpower Spec Neutral Screened Cable 3.2mm Sheath PVC/PVC	Nexans	
5.1.3 Underground Double Insulated LV Pillar Lead		Copper	Prysmian Power Cables	UG LV CU 1C 16mm <sup>2</sup> , 25mm <sup>2</sup> , 35mm <sup>2</sup> PVC/PVC Pillar Lead Red/White/Blue/Black	Prysmian Power Cables	
5.1.4 Underground Double Insulated LV Single Core Copper Cable		Copper	Prysmian Power Cables	UG LV CU 1C 50mm <sup>2</sup> , 70mm <sup>2</sup> , 95mm <sup>2</sup> , 120mm <sup>2</sup> , 185mm <sup>2</sup> , 300mm <sup>2</sup> XLPE/PVC Red/White/Blue/Black where applicable	Prysmian Power Cables	



Name	Image	Material	Make	Model	Supplier	Notes
5.1.5 Underground Double insulated LV Single Core Aluminium Cable		Aluminium	Prysmian Power Cables	UG LV AL 1C 630mm <sup>2</sup>	Prysmian Power Cables	
5.1.6 Underground 4 Core Copper LV Cable		Copper	Prysmian Power Cables	UG LV CU 4C 25mm <sup>2</sup> , 50mm <sup>2</sup> Black XLPE/PVC	Prysmian Power Cables	
5.1.7 Underground 11kV AL XLPE 3C 35mm CWS 3.3kA		Aluminium (Copper Wire Screen)	Prysmian Power Cables	UG HV AL XL 3C 35mm <sup>2</sup> CWS	Prysmian Power Cables	
			Nexans	UG HV AL XL 3C 35mm <sup>2</sup> CWS	Nexans	
5.1.8 Underground 11kV AL XLPE 3C		Aluminium (Copper Wire Screen)	Prysmian Power Cables	UG HV AL XL 3C 185mm <sup>2</sup> CWS	Prysmian Power Cables	
			Nexans	UG HV AL XL 3C 185mm <sup>2</sup> CWS	Nexans	



Name	Image	Material	Make	Model	Supplier	Notes
185mm CWS 10kA						
5.1.9 Underground 11kV AL XLPE 3C 300mm CWS 13.1kA		Aluminium (Copper Wire Screen)	Prysmian Power Cables	UG HV AL XL 3C 300mm2 CWS	Prysmian Power Cables	
			Nexans	UG HV AL XL 3C 300mm2 CWS	Nexans	
5.1.10 Underground 11kV AL XL 1C 35mm CWS PVC		Aluminium (Copper Wire Screen)	Prysmian Power Cables	UG 11KV AL XL 1C 35mm2 CWS PVC	Prysmian Power Cables	
			Nexans	UG 11KV AL XL 1C 35mm2 CWS PVC	Nexans	
5.1.11 Underground		Aluminium (Copper Wire Screen)	Prysmian Power Cables	UG 11KV AL XL 1C 185mm2 CWS PVC	Prysmian Power Cables	





Name	Image	Material	Make	Model	Supplier	Notes
11KV AL XL 1C 185mm CWS PVC			Nexans	UG 11KV AL XL 1C 185mm2 CWS PVC	Nexans	
5.1.12 Underground 11KV AL XL 1C 300mm CWS PVC		Aluminium (Copper Wire Screen)	Prysmian Power Cables	UG 11KV AL XL 1C 300mm2 CWS PVC	Prysmian Power Cables	
			Nexans	UG 11KV AL XL 1C 300mm2 CWS PVC	Nexans	
5.1.13 Neutral Tag		UV Stabilised Plastic		ID Cable Tie Black "NEUTRAL" Tag	Safeworx	
5.1.14 Clamps		Glass fibre reinforced polymide	Transnet	Clamp Block Plastic 26- 50mm/50-80mm-centre mounting hole	Transnet	





		<p>316 Stainless Steel</p>	<p>CMP</p>	<p>Sapphire Multicore Cable Clamp – Size to suit</p>	<p>Preformed Line Products (NZ)</p>	
		<p>316 Stainless Steel</p>	<p>CMP</p>	<p>Sovereign 3x1 Core Cable Clamp – Size to suit</p>	<p>Preformed Line Products (NZ)</p>	
<p>5.1.15 Bandit Strap</p>		<p>304 Stainless Steel</p>	<p>CABAC</p>	<p>Bandit Tape 304 Stainless 12.7mm</p>	<p>CABAC NZ</p>	
			<p>Transnet</p>		<p>Transnet</p>	
			<p>CABAC</p>	<p>Bandit Buckle Stainless 12.7mm</p>	<p>CABAC NZ</p>	





<p>5.1.16 Bandit Buckle</p>		<p>304 Stainless Steel</p>	<p>Transnet</p>		<p>Transnet</p>	
<p>5.1.17 Signal Tape</p>		<p>Plastic</p>	<p>Transnet</p>	<p>TAPE WARNING ELECTRICAL</p>	<p>Transnet</p>	
<p>5.1.18 Polymeric cable Cover</p>		<p>Polymeric</p>	<p>Transnet</p>	<p>CABLE COVER PLASTIC 150X6X25M</p>	<p>Transnet</p>	<p>Compliant to AS/NZS 4702:2000</p>
<p>5.1.19 Ducting</p>		<p>PVC</p>	<p>Ideal Electrical Supplies</p>	<p>DUCT FLEXIBLE 65MM/110MM ORANGE UNPUNCHED DRAINCOIL</p>	<p>Ideal Electrical Supplies</p>	
		<p>PVC</p>	<p>Iplex Pipelines</p>	<p>CABLE DUCTING ORANGE HD 50mm, 80MM, 100mm</p>	<p>Corys Electrical</p>	
		<p>PVC</p>	<p>Marley</p>	<p>CABLE DUCTING ORANGE HD 50mm, 80MM, 100mm</p>	<p>Ideal Electrical Supplies</p>	
		<p>PVC</p>	<p>Iplex Pipelines</p>	<p>DUCTING BEND ORANGE 90 Deg, 45 Deg ( to suit duct size)</p>	<p>Corys Electrical</p>	
		<p>PVC</p>	<p>Marley</p>	<p>DUCTING BEND ORANGE 90 Deg, 45 Deg ( to suit duct size)</p>	<p>Ideal Electrical Supplies</p>	
		<p>PVC</p>	<p>Iplex Pipelines</p>	<p>DUCTING WHITE PN15 Pressure Pipe 20mm</p>	<p>Corys Electrical</p>	







		PVC	Marley	DUCTING WHITE PN15 Pressure Pipe 20mm	Ideal Electrical Supplies	
		PVC	Iplex Pipelines	DUCTING WHITE PN6 Pressure Pipe 40mm, 50mm, 80mm	Corys Electrical	
		PVC	Marley	DUCTING WHITE PN6 Pressure Pipe 40mm, 50mm, 80mm	Ideal Electrical Supplies	
5.1.20 Rayflate Duct Seal			Raychem	TDUX-60-INT, TDUX-90-INT, TDUX-100-INT, TDUX-125-INT, RDSS-150	Transnet	
5.1.21 Duct Sealing Plug		High impact plastic and elastic gaskets	Tyco	RBDP-BLA series (size to match)	Transnet	
5.1.22 Continuous Conduit		Marley	Marley	As Specified by design	Marley Ideal Electrical	
		Iplex	Iplex Pipelines	As Specified by design	Iplex Pipelines Corys Electrical	
5.1.23 Marker Ball		Water-resistant polyethelene	3M	ID Marker Ball Red 14525XR/ID	OHUG Power Equipment	





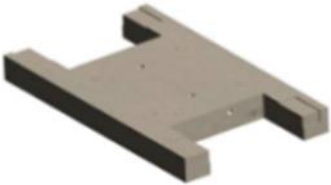


		High Density Polyethylene	Transnet	Cover Plastic Pole Guard HV 2.7 x 150mm	Transnet	
5.1.24 Cable Pole Guard		High Density Polyethylene	Transnet	White plastic pole wrap 2700 x 600mm Dia	Transnet	Minimum of three stainless steel fixings. Pole number and warning signs not obscured



		UV stabilised polyethylene	Gyro	ECG 35 Cable Guard ECG 32 Cable Guard ECPG P43 Cable Guard	Gyro	
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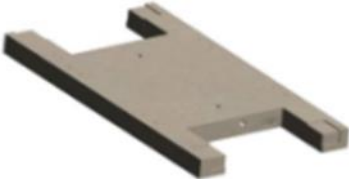

## 5.2 Concrete

Name	Image	Material	Make	Model	Supplier	Notes
5.2.1 Transformer Pads		Concrete	Busk	MSP2250EDT TXFMR CONC 2.25X1.3X0.2M MINI 100-500KVA	Busk Prestressed Concrete Ltd	

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Name	Image	Material	Make	Model	Supplier	Notes
		Concrete	Busk	MSP1350ED TXFMR CONC 1350 X 1150MM MICRO 15-75KVA	Busk Prestressed Concrete Ltd	
		Concrete	Busk	MSP2050 TXFMR CONC 2.05X1.15X0.1M MINI 100-300KVA	Busk Prestressed Concrete Ltd	
		Concrete	Busk	MSP2400ED TXFMR CONC 2400 X 1300MM MINI 500KVA	Busk Prestressed Concrete Ltd	
<p>5.2.2 Switch Bases</p>		Concrete	Busk	Base RMU Safelink Foundation Assembly (CFC, CFCC, CFCF)	Busk Prestressed Concrete Ltd (top supplied by ABB)	
		Concrete	Busk	Halo Foundation Series for Siemens 8DJH	Busk Prestressed Concrete Ltd	



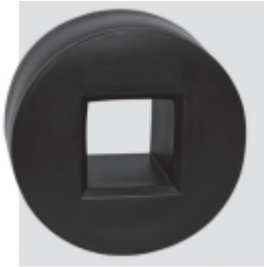


Name	Image	Material	Make	Model	Supplier	Notes
5.2.3 Pole Top Blocks		Concrete	Busk	Top Block BB600 Small BB900 Medium BB1200 Large	Busk Prestressed Concrete Ltd	
		Plastic	Transnet	BB600 BB900 BB1200	Transnet	
5.2.4 Pole Heel Block		Concrete	Busk	Heel Block HB460	Busk Prestressed Concrete Ltd	
		Plastic	Transnet	HB 450	Transnet	



Name	Image	Material	Make	Model	Supplier	Notes
5.2.5 Pole Sinkage Blocks		Concrete	Busk	D490 Bottom Block Concrete donut single 9.5m-12.5m	Busk Prestressed Concrete Ltd	
		Concrete	Busk	D540 Concrete donut 12.4 to 18.5M	Busk Prestressed Concrete Ltd	
		Concrete	Busk	DD540 Concrete donut for double 9.5 to 12.5M	Busk Prestressed Concrete Ltd	
		Concrete	Busk	DD840 Concrete donut for double 12.4 to 18.5M	Busk Prestressed Concrete Ltd	
		Concrete	Busk	Concrete donut for Northpower manufactured poles as per Busk drawing 777-B014-01	Busk Prestressed Concrete Ltd	



Name	Image	Material	Make	Model	Supplier	Notes
		Plastic	Transnet	HBDNUT 430 HBDNUT 480	Transnet	

### 5.3 Conductors

Name	Image	Material	Make	Model	Supplier	Notes
5.3.1 Bare Aluminium Conductors		AAAC	-Nexans -Prysmian Power Cables	OH BARE AAAC Fluorine 7/3.00	-Nexans -Prysmian Power Cables	
		AAAC	-Nexans -Prysmian Power Cables	OH BARE AAAC Helium 7/3.75	-Nexans -Prysmian Power Cables	
		AAAC	-Nexans -Prysmian Power Cables	OH BARE AAAC Iodine 7/4.75	-Nexans -Prysmian Power Cables	
		AAAC	-Nexans -Prysmian Power Cables	Overhead Bare AAAC Neon 19/3.75	-Nexans -Prysmian Power Cables	









Name	Image	Material	Make	Model	Supplier	Notes
5.3.2 Bare Copper Conductors		Copper	-Nexans -Prysmian Power Cables	OH bare Cu 16mm, 25mm, 50mm,70mm	-Nexans -Prysmian Power Cables	
5.3.3 Overhead Covered Copper Conductor		Copper	-Nexans -Prysmian Power Cables	OH bare PVC CU HD 10mm,16mm,25mm, 35mm, 70mm, 95,mm	-Nexans -Prysmian Power Cables	
5.3.4 Overhead Aerial Bundled Conductor		Aluminium	-Nexans -Prysmian Power Cables	OH ABC LV AL XL 4C 35mm <sup>2</sup> , 95mm <sup>2</sup> , 95mm + 16mm <sup>2</sup> CU pilot	-Nexans -Prysmian Power Cables	
5.3.5 Preformed		Bare Aluminium	Preformed Line Products	AFG Series to suit conductor size	Preformed Line Products (NZ)	
			Transnet (NZ)	TNADE Series to suit conductor size	Transnet (NZ)	
		Bare Copper	Preformed Line Products	CFG Series to suit conductor size	Preformed Line Products (NZ)	





Name	Image	Material	Make	Model	Supplier	Notes
			Transnet (NZ)	TNCDE Series to suit conductor size	Transnet (NZ)	
5.3.6 Armour Rods		Aluminium Alloy	Preformed Line Products	AAR Series to suit conductor size	Preformed Line Products	HV Only
			Transnet (NZ)	Aluminium Alloy to suit conductor size	Transnet (NZ)	
5.3.7 Distribution Ties	TBA					HV Only
5.3.8 Vibration Dampers		UV Stable PVC Rod	Preformed Line Products	To suit conductor size	Preformed Line Products	
			Transnet (NZ)	To suit conductor size	Transnet (NZ)	
		Aluminium Alloy Clamp Cast Iron (Galvanised) Weights Steel Cable (Galvanised)	Stockbridge	To suit conductor size	Preformed Line Products	
				To suit conductor size	Transnet (NZ)	





Name	Image	Material	Make	Model	Supplier	Notes
5.3.9 Binder Wire		Copper	Prysmian Power Cables	BINDER BARE CU 1/2.03MM2	Prysmian Power Cables	
		PVC Copper	Prysmian Power Cables	BINDER PVC CU 1/1.7MM2	Prysmian Power Cables	
		Aluminium	Prysmian Power Cables	BINDER BARE AL 1/4.10MM2	Prysmian Power Cables	
		PVC Aluminium	Prysmian Power Cables	BINDER PVC AL 1/3.2MM2	Prysmian Power Cables	



### 5.4 Connectors

Name	Image	Material	Make	Model	Supplier	Notes
5.4.1 Mini Wedge (for TUDS Pit)			AMPACT	Mini Wedge with Gel Enclosure – Size as required	Transnet	
5.4.2 Insulation Piercing Connectors (IPC)  See Appendix A			Sicame	TTD Series	Cuthbert Stewart Ltd	
			Sicame	CCW Series	Cuthbert Stewart Ltd	



Name	Image	Material	Make	Model	Supplier	Notes
						
			Sicame	CAW Series	Cuthbert Stewart Ltd	
			Sicame	NTDC Series	Cuthbert Stewart Ltd	






Name	Image	Material	Make	Model	Supplier	Notes
			Sicame	NTD Series	Cuthbert Stewart Ltd	
<p>5.4.3 Ampact Connectors</p> <p>(See Appendix B Ampact Chart)</p>		<p>Aluminium Alloy</p> <p>Copper</p>	Ampact	As required for conductor size and type	Transnet (NZ) Ltd	





Name	Image	Material	Make	Model	Supplier	Notes
5.4.4 Gelpact Covers		UV Stable Plastic Housing	Tyco Electronics	Black Gelpact Cover two sizes White/Blue and Yellow Ampact sizes	Transnet	
5.4.5 Non Tension Aluminium Compression Sleeves			As Required	As Required	Transnet	
			As Required	As Required	Preformed Line Products (NZ)	
			As Required	As Required	OHUG	
			As Required	As Required	CABAC	
			As Required	As Required	Electrical Connections Ltd	
5.4.6 Full Tension Aluminium Compression Sleeves			PLP Electropar	As Required	PLP Electropar	
5.4.7 Copper Full and Non			Utilux	As Required	Transnet	







Name	Image	Material	Make	Model	Supplier	Notes
Tension Sleeves						
5.4.8 Cap Joint		Aluminium		Connector cap joint 70-25mm, 95-25mm, 120-25mm, 185-25mm	Electropar Ltd-T/A Preformed Line Products	
5.4.9 Line Taps/Split Bolt Connectors/HD connectors		Brass	Bowthorpe	Connector Splitbolt Cu HD10 7/064, HD12 7/80, HD12A 19/064, HD 14 19/080 HD15 19/12	Hiko Power Engineering	
5.4.10 Submersible Connectors			TE	GelPort –size as required	Transnet ( NZ)	





Name	Image	Material	Make	Model	Supplier	Notes
			Sicame	PHMS 3-6-50 PHMS 4-6-50	CSL	Trial only (See Network Engineering before use)
			Sicame	PHM 6-16-240	CSL	Trial only (See Network Engineering before use)
<p>5.4.11 LV Shearbolt Connectors</p>		Aluminium Alloy	Various	Compliant with IEC 61238-1:2018 or ASNZS 4325  Shall be Class A	<ul style="list-style-type: none"> <li>• Transnet (NZ)</li> <li>• PLP (NZ)</li> <li>• ECL (NZ)</li> <li>• Hiko (NZ)</li> </ul>	LV Only Only Suitable for Bimetallic connections where cable is water blocked and Sleeve is covered

## 5.5 Crossarms



Name	Image	Material	Make	Model	Supplier	Notes	
5.5.1 Wood		Purple Heart, Grey Box, Spotted Gum, Grey Ironbark Red Ironbark	Wood		Size, strength and drilled as per design	Hermpac-Herman Pacific Ltd	Generally 100mm x 75mm for LV
5.5.2 Steel		Galvanised Steel	Warren Engineering	Northpower Network design	Warren Engineering		
			Avon Industries		Avon Industries		
5.5.3 Pole tops		Galvanised Steel	Avon Industries Industries	As per Northpower Network design	Avon Industries Industries	HV Only	
5.5.4 Delta		Galvanised Steel	Avon Industries Industries	As per Northpower Network designs	Avon Industries Industries	HV Only	







## 5.6 Earthing


Name	Image	Material	Make	Model	Supplier	Notes
5.6.1 Earth Rod		Copper Coated Steel	Transnet	Earth Rod 1.8M X 13MM- 254 Microns Copper	Transnet (NZ) Ltd	
			Fulton	Earth Rod 1.8M X 13MM- 250 Microns Copper	NZI	
5.6.2 Earth Grid Connector			Transnet	Wrench Lock 13MM-50- 70MM	Transnet (NZ) Ltd	
			Connector Products Inc.	CPI Ground Grid Connector	Preformed Line Products (NZ)	
			Erico	Earth Rod Coupling 13MM	Transnet (NZ) Ltd	





Name	Image	Material	Make	Model	Supplier	Notes
5.6.3 Earth Rod Coupling		Brass	Fulton	BCP13 Brass Coupler	NZI	
5.6.4 Earth Rod Star Tip		Brass	Erico	Earth Rod Star Tips	Transnet (NZ) Ltd	
		Steel	Fulton	Earth Rod Star Tips	NZI	
5.6.5 Inspection Box		UV stabilised polypropylene	Transnet	Pit Inspection Box For Single Earth Rod	Transnet (NZ) Ltd	

### 5.7 Fusing

Name	Image	Material	Make	Model	Supplier	Notes
5.7.1 63A Fuse Carrier			Ipd Group Ltd	RS63H	Approved Electrical Supplier	





Name	Image	Material	Make	Model	Supplier	Notes
			TE Tyco	Tyco 63A Fuse	Transnet (NZ)	
<p>5.7.2 32A Front Wire Fuse</p>			Ipd Group Ltd	RS32H	Approved Electrical Supplier	
<p>5.7.3 Submersible Fuse Carrier</p>			TE	K199 100A Submersible Fuse Carrier	Transnet	
<p>5.7.4 Underground Horizontal 160A Fuse Disconnect</p>			Jean Mueller NZ	Keto Size 00 160A Baseplate Mounted	Jean Mueller NZ	



Name	Image	Material	Make	Model	Supplier	Notes
5.7.5 Underground Horizontal 250A Fuse Disconnect			Jean Mueller NZ	Keto Size 1 250A Baseplate Mounted	Jean Mueller NZ	
5.7.6 Underground Horizontal 400A Fuse Disconnect		Composite cable covers	Jean Mueller NZ	Keto Size 2 400A Baseplate Mounted	Jean Mueller NZ	
5.7.7 Underground Horizontal 630A Fuse Disconnect		Composite cable covers	Jean Mueller NZ	Keto Size 3 630A Baseplate Mounted	Jean Mueller NZ	





Name	Image	Material	Make	Model	Supplier	Notes
5.7.8 Underground Vertical 160A Fuse Disconnect			Jean Mueller NZ	Vertical Disconnect SL00-3X3/185/F	Jean Mueller NZ	DIN000 and DIN 00
			Efen	Vertical Disconnect EFV00160	Hiko Power Engineering	DIN000 and DIN 00





Name	Image	Material	Make	Model	Supplier	Notes
			Apator	Vertical Disconnect ARS00Pro	Transnet	DIN000 and DIN 00
<p>5.7.9 Underground Vertical 250A Fuse Disconnect</p>			Jean Mueller NZ	Vertical Disconnect SL1G-3X3/3A	Jean Mueller NZ	DIN1



Name	Image	Material	Make	Model	Supplier	Notes
			Apator	Vertical Disconnect ARS1	Transnet	DIN1
<p>5.7.10 Underground Vertical 400A Fuse Disconnect</p>			Jean Mueller NZ	Vertical Disconnect SL2G-3X3/3A	Jean Mueller NZ	DIN1&2



Name	Image	Material	Make	Model	Supplier	Notes
			Efen	Vertical Disconnect EFV2400	Hiko Power Engineering	DIN2
			Apator	Vertical Disconnect ARS2	Transnet	DIN2


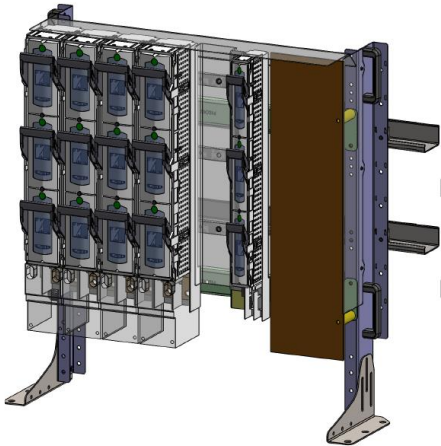




Name	Image	Material	Make	Model	Supplier	Notes
5.7.11 Underground Vertical 630A Fuse Disconnect			Jean Mueller NZ	Vertical Disconnect SL3-3X3/3A	Jean Mueller NZ	DIN1,2&3
			Efen	Vertical Disconnect EFV3630	Hiko Power Engineering	DIN3


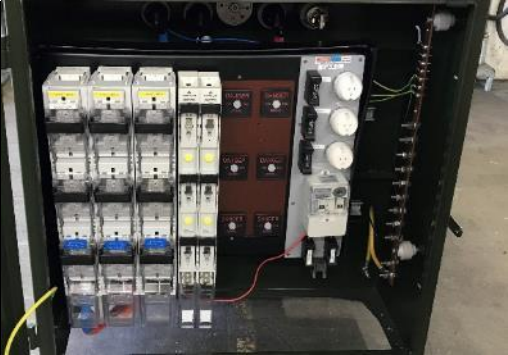




Name	Image	Material	Make	Model	Supplier	Notes
			Apator	Vertical Disconnect ARS3	Transnet	DIN3
5.7.12 LV Frames		Stainless Steel Frame	Hiko Power Engineering	Tank Mount or Floor Mount as Required Size As required	Hiko Power Engineering	





Name	Image	Material	Make	Model	Supplier	Notes
			Jean Mueller NZ	Size and Mount as required	Jean Mueller NZ	
			Transnet	6 Way TXLVP6WAY	Transnet	



Name	Image	Material	Make	Model	Supplier	Notes
5.7.13 Overhead 100A Fuse Carrier		U.V. stabilised polymeric body with anti-flame retardant	Sicame	PFV100 c/w ID Plate	Cuthbert Stewart Ltd	
		U.V. stabilised polymeric body with anti-flame retardant	Michaud	K491 c/w ID Plate	Transnet (NZ)	
5.7.14 Replacement IPC Bolt			Sicame	Spare Shear Bolt for PFV 100 12MM Yellow	Cuthbert Stewart Ltd	
			Michaud	K430 white replacement shear bolt for K491	Transnet (NZ)	
			Michaud	Replacement shear bolt for K199 cable ports	Transnet (NZ)	





Name	Image	Material	Make	Model	Supplier	Notes
5.7.15 Overhead 160A Fuse Carrier			Michaud	Michaud K292 6mm-95mm	Transnet Ltd	
			Krone	Krone KGH160A	Transnet Ltd	
5.7.16 Overhead 400/630A Fuse Carrier			Krone	Krone KGH/400 630A 25mm-150mm	Transnet Ltd	
5.7.17 DIN Fuses			Bussman	Fuse Link DIN Type – Size as required	New Zealand Insulators	





Name	Image	Material	Make	Model	Supplier	Notes
			TE	Fuse Link DIN Type – Size as required	Transnet	
5.7.18 Barrel Fuses			Bussman	Fuse Link DIN Type – Size as required	New Zealand Insulators Transnet	
			TE	Fuse Link DIN Type – Size as required		
5.7.19 32A Off-Set Tag Fuse Cartridge			IPD	Fuse Off Set Tag 32A	Approved Electrical Supplier	
			Bussman	Fuse Off Set Tag 32A		
			Vynco	Fuse Off Set Tag TIA32		
			IPD	Fuse Off Set Tag 63A	Approved Electrical Supplier	






Name	Image	Material	Make	Model	Supplier	Notes
5.7.20 63A Off-Set Tag Fuse Cartridge			Bussman	Fuse Off Set Tag 63A		
			Vynco	Fuse Off Set Tag 63A TIS 63		
5.7.21 Phase Bars		Copper, Heatshrink and Stainless Treaded Insert	Transnet (NZ)	160A U Bar 19 x 4.75mm EPRBK000U/BARKIT	Transnet (NZ)	
5.7.22 HV Cutout		HTV Silicone Rubber/Stainless Steel, Galvanised Steel	S&C Electric Company	SX Fuse Cutout	Preformed Line Products (NZ)	
5.7.23 HV Fuse Link			Chance	Type K Fuse Links (size to suit)	Acculec Pty	
			Chance	Type K Fuse Links (size to suit)	Transnet	





Name	Image	Material	Make	Model	Supplier	Notes
			Pistol	Type K Fuse Links (size to suit)	Preformed Line Products (NZ)	



### 5.8 Insulators

Name	Image	Material	Make	Model	Supplier	Notes
5.8.1 LV Small Bobbin		Ceramic	NZI	NZI 210 Reel	NZI	Used for >25mm terminations
		Ceramic	Transnet	LV Shackle Porcelain Insulator-210	Transnet	Used for >25mm terminations
5.8.2 LV Medium Bobbin		Ceramic	NZI	NZI 205 Reel	NZI	Used for < 25mm terminations
		Ceramic	Transnet	CSKL 303 Porcelain Insulator-205	Transnet	Used for < 25mm terminations
5.8.3 Shackle Strap		Galvanised Steel	Avon Industries	Avon Industries AA20001 Shackle Strap 7"	NZI	
		Galvanised Steel	Transnet	GSSM3X32x180	Transnet	
		Galvanised Steel	Avon Industries	Avon Industries Shackle Strap 7"	Avon Industries	
5.8.4 U Shackle Large		Galvanised Steel	Avon Industries	Avon Industries AA23002 205 U Shackle Large	NZI	
		Galvanised Steel	Transnet	U Shackle Straps GUS205M3x32x100	Transnet	
		DMC and Zinc Plated Steel	NZI	NZI 6/50/M10 DMC Standoff	NZI	





Name	Image	Material	Make	Model	Supplier	Notes
5.8.5 Stand Off Insulator			Transnet	1050GN 31x41x50M10 3.3kV	Transnet	
5.8.6 LV Insulator (Round Top)		Ceramic	NZI	NZI 510 (Round Top	NZI	
		Ceramic	Transnet	LV Porcelain Insulator-510	Transnet	
5.8.7 LV Insulator Pin		Galvanised Steel		5/8 Cordeau Spindle	NZI	
		Galvanised Steel	Transnet	5/8" Galvanised pin510/511+Sqyare Washer Double Helix Spring Washer & Nut M16x245mm DH	Transnet	
		Ceramic	NZI	NZI 1130W26	NZI	Used mainly for jumper insulators

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Name	Image	Material	Make	Model	Supplier	Notes
5.8.8 11kV Tie Top Pin Insulator		Ceramic	Transnet	11kV Pin Type Insulators-1130W	Transnet	
5.8.9 HV Insulator Pin		Galvanised Steel	China	AX Nema Nylon Spindle	NZI	
		Galvanised Steel	Transnet	1" Nylon Head Galvanised Pin-1130W M2 X 267mm Double Helix Spring, Nut and Lock Nut	Transnet	
5.8.10 HV Tie Top Post Insulator		Ceramic and Galvanised Steel	NZI	NZI 11kV 300W32 Line Post	NZI	
		Ceramic and Galvanised Steel	NZI	NZI 11kV 400W32 Line Post	NZI	
		Ceramic and Galvanised Steel	Transnet	11KV Tie Top Insulator-EL9730-000	Transnet	
		Ceramic and Galvanised Steel	Dulmison	Tie Top Line Post Insulator	OHUG	
		EVA and Galvanised Steel	TE	RPL-30R-FG 30kV EVA Vertical Tie Tops – 11kV, RPL-43R-FG 43kV EVA Vertical Tie Top – 33kV	Transnet	For coastal use where extra creepage is required

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Name	Image	Material	Make	Model	Supplier	Notes
5.8.11 HV Pedestal Insulator		Ceramic and Galvanised Steel	NZI	NZI 1131 11kV Station Post	NZI	
5.8.12 33kV Tie Top Post Insulator		Ceramic and Galvanised Steel	NZI	NZI 33kV 915W40 Line Post	NZI	
		Ceramic and Galvanised Steel	Dulmison	Solid Core Line Post Insulator	Transnet	
		EVA and Galvanised Steel	TE	RPL-43R-FG 43kV EVA Vertical Tie Top	Transnet	For coastal use where extra creepage is required
5.8.13 K-Line Insulator		Silicone and Galvanised Steel	K-Line Insulators	28kV or 46kV K-Line C-W KLOP32C Stud	Adapt New Zealand Ltd	





Name	Image	Material	Make	Model	Supplier	Notes
5.8.14 11 kV HV Polymer Strain		Polymer and Galvanised Steel	DTR	DTR 15kV Polymer Strain	NZI	
5.8.15 33kV Polymer Strain		Polymer and Galvanised Steel	DTR	DTR 35kV Polymer Strain	NZI	
5.8.16 Copper Thimble		Galvanised Steel	AX	AX Galv Steel Clevis Thimble	NZI	
5.8.17 Aluminium Thimble		Aluminium	AX	AX Aluminium Clevis Thimble	NZI	





### 5.9 Overhead Accessories

Name	Image	Material	Make	Model	Supplier	Notes
5.9.1 Bolts		Galvanised Steel	Allied	M12, M16, M20 Length as required	Allied Fastenings	
5.9.2 Treaded Rod		Galvanised Steel	Allied	Rod Galvanised Full Threaded M12/M16 X 1M	Allied Fastenings	
5.9.3 Arm Brace (Flat)		Galvanised Steel	Avon Industries	Arm Brace Flat- (30mm wide x 5mm thick) 510mm (20") 700mm (28") 900mm (36") 1070mm (42")	Avon Industries	
5.9.4 Arm Brace (Angle)		Galvanised Steel	Avon Industries	Arm Brace Angle 1370mm (54") 1800mm (72")	Avon Industries	
5.9.5 Galvanised Washer (Round)		Galvanised Steel	Allied	Washer Galvanised Round M12/M16 50X3MM & M12x28x3mm	Allied Fastenings	



Name	Image	Material	Make	Model	Supplier	Notes
5.9.6 Stainless Bolts (316)		316 Stainless Steel	Allied	Screw Set SS316 M10, M12, M16 Length to suit (includes nuts and washers)	Allied Fastenings	Plain or Nylock Nut of the same grade Flat and/or Spring washer as required
5.9.7 J-Bolt		Galvanised Steel	Avon Industries	J-Bolt Galv M10 X 230MM	Avon Industries	
5.9.8 Surge Arrestors		Polymer	Hubbell	12kV IEEE Riser Pole Class Polymer Housed Surge Arrestor	Acculec PTY	HV Only
		Polymer	Hubbell	12kV IEEE Heavy Duty / IEC Distribution High Polymer Housed Surge Arrestor (Stud Both Ends)	Acculec PTY	Crucifix




Name	Image	Material	Make	Model	Supplier	Notes
		Polymer	Transnet	OCP2 Series (Stud Both Ends)	Transnet	Crucifix
5.9.9 Crucifix Bracket		Galvanised Steel	Acculec PTY	11kV and 33kV options	Acculec Pty	Can be supplied with the cable clamp
			Transnet	11kV and 33kV options	Transnet	Can be supplied with the cable clamp
5.9.10 Eye Bolt Connector		Tin Plated Brass	Transnet	Eye Bolt Connector for Surge Arrestor (AS1160-001 or AS1180-003)	Transnet	
5.9.11 ABC Fittings		Aluminium Alloy with Stainless Fasteners- Elastomer Bushing	Sicame	SC435 Suspension Clamp 4X35mm	Cuthbert Stewart Ltd	
			Transnet	SC495 Suspension Clamp 4X95mm	Transnet	







Name	Image	Material	Make	Model	Supplier	Notes
		Aluminium Alloy with Stainless Fasteners- Glass filled nylon wedges	Sicame	Main Strain Clamp 4x25mm-4x50mm( 35mm ABC4C)	Cuthbert Stewart Ltd	
			Transnet	4x50mm-4x95mm (95mm ABC4C)	Transnet	
		Galvanised steel	Avon Industries	Open Eye Bolt 16mmx250mm Open Eye Bolt 16mmx325mm	Cuthbert Stewart Ltd	
		Galvanised steel	Transnet	Large angle yoke-double suspension clamp	Transnet	
			Sicame		Cuthbert Stewart Ltd	
		Galvanised steel	Transnet	Mechanical weak link 400	Transnet	
			Sicame		Cuthbert Stewart Ltd	



5.10 Pillars and Pits

Name	Image	Material	Make	Model	Supplier	Notes
5.10.1 EP4 Pillar			Eco Pillar	EP4 Pillar	Transnet	Neutral Bar at the back
5.10.2 EP3 Pillar			Eco Pillar	EP3 Pillar	Transnet	Neutral Bar at the back
5.10.3 EP2 Pillar			Eco Pillar	EP2 Pillar	Transnet	Neutral bar
5.10.4 TUDS Pit				TUDS325S with Lid	Transnet	
5.10.5 Link Pillar Cabinet		UV Stabilised Polycarbonate	Langmatz	Size as required	Hiko Power Engineering	





Name	Image	Material	Make	Model	Supplier	Notes
		UV Stabilised Plastic	Gyro	CAB 60	Gyro	Northpower Spec as per NEEP
5.10.6 U-Pillar			U-Pillar	6x 63A 1 Phase 1x 160A 3 Phase	Hiko Power Engineering	


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### 5.11 Locks

Name	Image	Material	Make	Model	Supplier	Notes
5.11.1 Pad Locks			Assa Abloy	As per ENS 12.01.004 Electricity Network Lock Standard	Allied Locks	
5.11.2 Cylinder Locks (Round or Oval)			Assa Abloy	As per ENS 12.01.004 Electricity Network Lock Standard	Allied Locks	

### 5.12 Poles


Name	Image	Material	Make	Model	Supplier	Notes
5.12.1 Pre- stressed		Concrete	Busk	9.5m, 10m, 11m, 12.4m, 12.5m, 13.65m, 14.85, 15m, 18.5m all with reflector	Busk Prestressed Concrete Ltd	



Name	Image	Material	Make	Model	Supplier	Notes
<p>5.12.2 Engineered Cement</p>		<p>Engineered Cement</p>	<p>Dulhunty Poles</p>	<p>Titan Range to suit application General use:</p> <ul style="list-style-type: none"> <li>• Coastal areas</li> <li>• Where light weight poles are required</li> </ul>	<p>Transnet</p>	<p>Network Approval required</p>
<p>5.12.3 Possum Guard</p>		<p>Aluminium</p>	<p>Ulrich</p>	<p>Minimum width 600mm x 0.5mm thick</p>	<p>Ulrich Aluminium</p>	
			<p>NA</p>	<p>Minimum width 600mm x 0.5mm thick</p>	<p>The Cable Shop</p>	



### 5.13 Relays

Name	Image	Material	Make	Model	Supplier	Notes
5.13.1 Recloser Relays		Stainless Steel Enclosure	Eaton Cooper	Form 6	AD Riley	Spec available on request
		316 Stainless Steel Enclosure	Schneider	ADVC Ultra	Schneider New Zealand	Spec Available on request

### 5.14 Substations (To be added at a later date)

Name	Image	Material	Make	Model	Supplier	Notes
TBA						



### 5.15 11kV Switchgear



Name	Image	Material	Make	Model	Supplier	Notes
5.15.1 Ground Mounted Ring Main Units		Various	ABB	Safelink 2 <ul style="list-style-type: none"> <li>CFC</li> <li>CCC</li> <li>CFCC</li> <li>CFCF</li> <li>CCCC</li> </ul> Indoor and Outdoor units	ABB New Zealand	Northpower Spec (Available on Request)
		Various	Siemens	Siemens 8DJH <ul style="list-style-type: none"> <li>Confirm models with Engineering Team</li> </ul> Indoor and Outdoor units	HV Power	Contact Engineering Team for more info
5.15.2 Pole Mounted Reclosers		Various	Eaton Coopers	NOVA 15	AD Riley	Spec available on request





Name	Image	Material	Make	Model	Supplier	Notes
		Various	Schneider	U 27 Series Recloser	Schneider New Zealand	Spec available on request
<p>5.15.3 Pole Mounted Gas Switches</p>		Various	Schneider	Schneider RL Series 15kV and 36kV (manual and automated)	Schneider New Zealand	Spec available on request
<p>5.15.4 Knife Links</p>	 <p>150BIL HVI with Earthing Stirrup</p>	Polymer	NGK Stanger	NGK Stanger C-Type	NZI	



Name	Image	Material	Make	Model	Supplier	Notes
5.15.5 Pole Mounted Switch Brackets		Galvanised Steel	Avon Industries	Sectos Tee Bracket ( Northpower design)	Avon Industries	
		Galvanised Steel	Avon Industries	Switch Side Bracket (Northpower design)	Avon Industries	






### 5.16 11kV Joints and Terminations

Name	Image	Material	Make	Model	Supplier	Notes
5.16.1 Straight Joints		Hybrid	Cellpack	CHMSV Range to Suit <b>NETWORK PREFERRED ITEM</b>	Preformed Line Products	
		Heatshrink	Raychem	MXSU Range to Suit	Transnet	
5.16.2 Transition Joints		Hybrid	Cellpack	CHMPR3 Range to Suit 3 core to 3 core CHMPR3 Range to Suit 3 Core PILC to 1 Core XLPE <b>NETWORK PREFERRED ITEM</b>	Preformed Line Products	
		Heatshrink	Raychem	MXSU Range to Suit	Transnet	
5.16.3 Indoor Terminations		Hybrid	Cellpack	CHESK-1 Range to Suit (1 Core) CHESK-3I Range to Suit (3 Core)	Preformed Line Products	





Name	Image	Material	Make	Model	Supplier	Notes
		Heatshrink	Raychem	HVTI Range to Suit	Transnet	
5.16.4 Outdoor Terminations		Hybrid	Cellpack	CHESK-F Range to Suit (1 Core) CHESK-3F Range to Suit (3 Core) <b>NETWORK PREFERRED ITEM</b>	Preformed Line Products	When Copper droppers are used, Shear Bolt Friction Welded Bi-metallic Lugs are required.
		Heatshrink	Raychem	HVTO Range to Suit	Transnet	





Name	Image	Material	Make	Model	Supplier	Notes
5.16.5 Screened Elbows		Cold Applied	Raychem	RSTI Range to Suit (Type C Bushing) RSSS Range to Suit (Type A Bushing)	Transnet	Must be approved by switchgear manufacturer
			Cellpack	CWS Range to Suit (Type A) CTS Range to Suit (Type C)	Preformed Line Products	
			Nexans Euromould	400PB Range to Suit (Type C) 200LR Range to Suit (Type A)	Cuthbert Stewart	





Name	Image	Material	Make	Model	Supplier	Notes
			NKT	CB 24-630 Range to Suit (Type C) CSE-A 250 Range to Suit (Type A)	Hiko Power Engineering	
5.16.6 Bushing Boots	 <p>RCAB-4120 - RIGHT ANGLE &amp; INLINE</p>	Silicon	Raychem	RCAB-4120	Transnet	
		Silicon	Cellpack	CUB-2	Preformed Line Products	
		Heat Shrink	CFTS5 Heatshrink Feed Through	Range to suit application	Transnet	





Name	Image	Material	Make	Model	Supplier	Notes
5.16.7 Cable Glands		Heat Shrink	Cellpack SLT5	Range to suit application	Preformed Line Products	
5.16.8 Screen Kits		Various	Transnet	SEK-1	Transnet	
		Various	Cellpack	EGA as required	Preformed Line Products	

### 5.17 33kV Cable Joints and Terminations

Name	Image	Material	Make	Model	Supplier	Notes
5.17.1 Straight Joints		Hybrid	Cellpack	CHM 36kV Range to Suit <b>NETWORK PREFERRED ITEM</b>	Preformed Line Products	
		Heatshrink	Raychem	MXSU 36kV Range to Suit	Transnet	
5.17.2 Indoor Terminations		Hybrid	Cellpack	CHE-I 36kV Range to Suit (1 Core)	Preformed Line Products	
		Heatshrink	Raychem	HVTI 36kV Range to Suit	Transnet	
5.17.3 Outdoor Terminations		Hybrid	Cellpack	CHE-F 36kV Range to Suit (1 Core) <b>NETWORK PREFERRED ITEM</b>	Preformed Line Products	When Copper droppers are used, Shear Bolt Friction Welded Bi-metallic Lugs are required.
		Heatshrink	Raychem	HVTO 36kV Range to Suit	Transnet	




Name	Image	Material	Make	Model	Supplier	Notes
5.17.4 Screened Elbows		Cold Applied	Raychem	RSTI Range to Suit (Type C Bushing) RSSS Range to Suit (Type A Bushing)	Transnet	Must be approved by switchgear manufacturer
			Cellpack	CWS 36kV Range to Suit (Type A) CTS 36kV Range to Suit (Type C)	Preformed Line Products	
			Nexans Euromould	400PB Range to Suit (Type C) 200LR Range to Suit (Type A)	Cuthbert Stewart	







Name	Image	Material	Make	Model	Supplier	Notes
			NKT	CB 24-630 Range to Suit (Type C) CSE-A 250 Range to Suit (Type A)	Hiko Power Engineering	

### 5.18 Transformers

Name	Image	Material	Make	Model	Supplier	Notes
		Galvanised Steel	ETEL	As per AED.S.01.04	ETEL	Northpower Spec
5.18.1 Pole Mount		Galvanised Steel	Tyree	50kVA, 100kVA three phase	Tyree	Northpower Spec
		Galvanised Steel	Tyree	15kVA, 50kVA single phase	Tyree	Northpower Spec

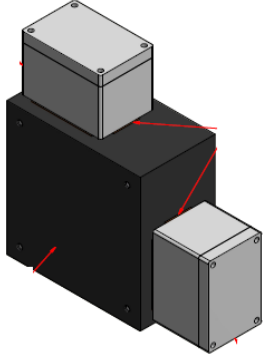





Name	Image	Material	Make	Model	Supplier	Notes
5.18.2 Ground Mount Micro		Painted Steel	ETEL	As per AED.S.01.04	ETEL	Northpower Spec
5.18.3 Ground Mount Minipad		Painted Steel	ETEL	As per AED.S.01.04	ETEL	Northpower Spec
5.18.4 Ground Mount Building		Painted Steel	ETEL	As required by design. Sizing to suit AED.S.01.04	ETEL	Northpower Spec








Name	Image	Material	Make	Model	Supplier	Notes
<p>5.18.5 Isolating Transformer</p>		<p>UV Stabilised Plastic</p>	<p>TWS Energy Controls</p>	<p>SCG 60 UV Stabilised</p>	<p>TWS Energy Controls</p>	
<p>5.18.6 Transformer Guards</p>		<p>Plastic</p>	<p>Gyro</p>	<p>As required by design</p>	<p>Gyro Plastics</p>	



### 5.19 Breach Joint

Name	Image	Material	Make	Model	Supplier	Notes
5.19.1 Breach Joint			TE	Guro Resin Joint Cable Kit – Size as required	Transnet	
			Pfisterer	Pfisterer ISICOPACT LV Branch Joints	Hiko Power Engineering (Hamer)	

### 5.20 Lugs

Name	Image	Material	Make	Model	Supplier	Notes
5.20.1 Compression Lugs			As Required	As Required	Transnet	
			As Required	As Required	PLP Electropar	
			As Required	As Required	OHUG	
			As Required	As Required	CABAC	
			As Required	As Required	Electrical Connections Ltd	





### 5.21 Heatshrink Tubing, Breakout Boots and Endcaps

Name	Image	Material	Make	Model	Supplier	Notes
5.21.1 Heatshrink Tubing		Heatshrink	Raychem	As Required	Transnet	Must be UV resistant
			Cellpack	As Required	PLP Electropar	
5.21.2 Breakout Boots		Heatshrink	Cellpack	2C, 3C,4C to suit cable size	PLP Electropar	Must be UV resistant
			Raychem		Transnet	
5.21.3 End Caps		Heatshrink	Raychem	17-8mm 30-17mm 45-30mm 65-45mm 95-65mm	Transnet	Must be UV resistant
			Cellpack	15-5mm 22-9mm 35-15mm 55-25mm 95-40mm	PLP-Electropar	









### 5.22 Guys/Stays

Name	Image	Material	Make	Model	Supplier	Notes
5.22.1 Guy Bobbin & Guy Strain (11kV)		Ceramic	NZI	NZI GY3 20kV	NZI	Can be substituted with polymer
5.22.2 Guy Bobbin & Guy Strain (33kV)		Ceramic	NZI	NZI GY4 30kV	NZI	
5.22.3 Guy Wire		Galvanised Steel Wire		Guy Wire Stay Galv. 7/12 SWG OD 8MM	Bridon New Zealand Limited	
		Galvanised Steel Wire		Guy-Wire Stay Galv Rope OD14MM 6X19 Strand Greased	Bridon New Zealand Limited	To be used where design requires





Name	Image	Material	Make	Model	Supplier	Notes
5.22.4 Bull Dog Clamp		Galvanised Steel		Galvanised Guy Rope Grip (bull dog clamp)12mm	Bridon New Zealand Ltd	
5.22.5 Screw Anchor		Galvanised Steel	Avon Industries	Screw Anchor 1.8m X 24mm and 2m x 32mm	Avon Industries	
5.22.6 Eye Bolt		Galvanised Steel	Avon Industries	M16 300mm	Avon Industries	
		Galvanised Steel	Allied Fastenings	M16 200mm, 250mm	Allied Fastenings	
5.22.7 Guy D Ring		Galvanised Steel	Avon Industries	AA11010 Anchor Guy Bracket	Avon Industries	
5.22.8 Guy Split Hose		PVC		Twiston Hose White 2.75m	Ideal Electrical Supplies	







Name	Image	Material	Make	Model	Supplier	Notes
		PVC	Transnet	Twist on stay wire guard	Transnet	
5.22.9 Guy Preform		Galvanised Steel		Preform Galv 7/12 Stay BU OD 7.33-7.82	Electropar Ltd - T/A Preformed Line Prod	
		Galvanised Steel		Preform Galv 14MM Wire Rope OD 14.00	Electropar Ltd - T/A Preformed Line Prod	
		Galvanised Steel		Deadend Preform Guy Lock BU Galv OD 7.50-7.92 7/12	Electropar Ltd - T/A Preformed Line Prod	Guy Straight


### 5.23 Labels

Name	Image	Material	Make	Model	Supplier	Notes
5.23.1 Labels		As required		As required	As required per specifications	All labels must have a minimum 30 year life span




## 6.0 Network Unapproved Equipment

### 6.1 11kV Switchgear

Name	Image	Make	Model	Supplier	Why Not Approved
6.1.1 Knife links		AK Power Solutions			<ul style="list-style-type: none"> <li>History of not closing properly</li> <li>Large amounts of Dissimilar Metals</li> <li>Hot Stick Operational point is too far down the blade which creates difficulty in operation</li> </ul>

### 6.2 11kV Cables

Name	Image	Make	Model	Supplier	Why Not Approved
6.2.1 Single Core 25mm <sup>2</sup> Al Copper Tape Screen		All	All	All	<ul style="list-style-type: none"> <li>Due to the earth screen breakout using copper braid, there has been a history of the braid corroding off resulting in cable faults.</li> <li>Requires special termination and joint kits</li> </ul>



## 7.0 Document Review History

Version Number	Date	Revision Notes (reason for change)
1.0	14/01/2021	New Document Release
2.0	29/03/2021	Document has been updated with extra LV equipment and HV equipment already approved but not in the first published document
3.0	02/09/2021	Additional Pillar items added
4.0	12/10/2021	Clarified supplier for 63A and 32A fuses. Added Pfisterer Branch Joint
5.0	12/11/2021	Added NZI 33kV 915W32 Line Post to the insulator section. Updated the ID code to match the recent network taxonomy changes (was AED.S.01.01, now AED.S.200.01)
6.0	14/12/2021	Added 32A and 63A off-set fuse cartridges
7.0	22/08/2022	Added Extra 32A and 63A off-set fuse cartridges and Barrel Fuses. Submersible Connectors Cable Glands
8.0	10/01/2023	Added pole mounted HV Switch section 5.15.3
9.0	24/01/2023	5.17.1 Added Tyree pole mount transformers 5.1.24 Added Gyro cable protection and Transnet pole guard 5.2.3 Added Transnet plastic pole top blocks 5.2.4 Added Transnet plastic pole heel blocks 5.2.5 Added Transnet plastic pole sinkage blocks 5.10.5 Added Gyro CAB 60 cabinet Appendix A-Updated IPC chart
10.0	26/02/2023	Added Section 6.0 – Network Unapproved Equipment 5.1.9 Underground 11kV AL XL 1C 25mm CTS PVC – Remove from approved and added to Unapproved List AK Power Solution Knife Link added to Unapproved list 5.8.10 Added 11kV Insulator 400W32 and edited EVA to be 30R 5.4.11 Edited LV Shear Bolts to be Standard Compliant 5.1.5 Added 630mm <sup>2</sup> Al Single Core LV Cable 5.17 33kV Joints and Terminations Added 5.1.4 Added 50mm <sup>2</sup> and 300mm <sup>2</sup> to match UG Design Standard



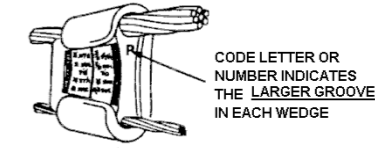
Appendices

Appendix A – IPC Usage Chart

		Branch/Tap Off Conductor										
		ABC		PVC Aluminium				PVC Hard Drawn Copper				
		35mm ABC	95mm ABC	Poko (31mm <sup>2</sup> )	Kutu (49.5mm <sup>2</sup> )	Rango (74mm <sup>2</sup> )	Weke (122mm <sup>2</sup> )	10mm <sup>2</sup> (7/.052)	16mm <sup>2</sup> (7/.064)	25mm <sup>2</sup> (7/.080)	35mm <sup>2</sup> (7/.104 or 19/.067) 70mm <sup>2</sup> (19/.083)	
Main Conductor	ABC	35mm ABC										
		95mm ABC					TTD401FA					
	PVC Aluminium	Poko (31mm <sup>2</sup> )										
		Kutu (49.5mm <sup>2</sup> )										
		Rango (74mm <sup>2</sup> )										
		Weke (122mm <sup>2</sup> )	TTD271FA							TTD271FA		
	PVC Hard Drawn Copper	10mm <sup>2</sup> (7/.052)	TTD101XFA		TTD101XFA				TTD101XFA			
		16mm <sup>2</sup> (7/.064)	TTD151FA			TTD151FA				TTD151FA		
		25mm <sup>2</sup> (7/.080)								TTD151FA 271	TTD271FA	
		35mm <sup>2</sup> (7/.104 or 19/.067)			TTD151FA 271							
		70mm <sup>2</sup> (19/.083)						TTD401FA				
	Bare Aluminium	Squirrel (21mm <sup>2</sup> )	CAW35	NTD301AFA	CAW35	NTD301AFA			CAW35/CAW235/CAW35DBE			NTD301AFA
		Gopher (26mm <sup>2</sup> )										
		Poko (31mm <sup>2</sup> )										
		Ferret (42mm <sup>2</sup> )										
		Flourine (47mm <sup>2</sup> )										
		Kutu (49.5mm <sup>2</sup> )						NTD401AXFA				
		Mink (63mm <sup>2</sup> )										
		Rango (74mm <sup>2</sup> )										
	Bare Hard Drawn Copper	Helium (74mm <sup>2</sup> )										
Dog (105mm <sup>2</sup> )			NTD351AFA		NTD351AFA					NTD351AFA		
Iodine (118mm <sup>2</sup> )												
Weke (122mm <sup>2</sup> )												
Bare Hard Drawn Copper	10mm <sup>2</sup> (7/.052)	CCW35	NTD301FA	CCW35	NTD301FA			CCW35/CCW235/CCW35DBE			NTD301FA	
	16mm <sup>2</sup> (7/.064)											
	25mm <sup>2</sup> (7/.080)											
	35mm <sup>2</sup> (7/.104 or 19/.067)											
	70mm <sup>2</sup> (19/.083)						NTD401XFA					



## Appendix B – Ampact Chart



If you require assistance phone TRANSNET NZ LTD (64) 9 274 3340

Revised Date: 01/08/2018

CABLE SIZE (Outside Dia)	WETA (16.75mm)	DOG/WEKE (14.16mm)	BEETLE (13.33mm)	95mm <sup>2</sup> Cu (19/2.52) (12.60mm)	MINK/ RANGO (10.98mm)	70mm <sup>2</sup> Cu (19/2.14) (10.70mm)	19/14 19/083 Cu (10.50mm)	KUTU/ FERRET (9.00mm)	FLOURINE (9.00mm)	19/16 19/064 Cu (8.13mm)	35mm <sup>2</sup> Cu (7.65mm)	GOPHER/ POKO (7.08mm)	SQUIRREL (6.33mm)	7/14 7/080 Cu (6.33mm)	7/16 7/064 Cu (4.88mm)
WETA (16.75mm)	0-602380-7	0-602380-6	0-602380-6	0-602380-5	0-602380-4	0-602380-3	0-602380-3	0-602380-3	0-602380-3	0-602380-2	0-602380-2	0-602380-2	0-602380-1	0-602380-1	0-602380-0
DOG/WEKE (14.16mm)		0-600466-0	0-600466-0	0-600465-0	0-600466-0	0-600466-0	0-600466-0	0-600458-0	0-600458-0	0-600411-0	0-600411-0	0-600411-0	0-600456-0	0-600456-0	0-600455-0
BEETLE (13.33mm)			0-600466-0	0-600466-0	0-600466-0	0-600458-0	0-600458-0	0-600411-0	0-600411-0	0-600411-0	0-600411-0	0-600411-0	0-600456-0	0-600456-0	0-600455-0
95mm <sup>2</sup> Cu (19/2.52) (12.60mm)				1-275187-1 Copper	0-600458-0	1-275187-2 Copper	1-275187-2 Copper	0-600411-0	0-600411-0	1-275187-4 Copper	1-275187-4 Copper	0-600403-0	0-600447-0	3-275187-6 Copper	3-275187-7 Copper
MINK/RANGO (10.98mm)					0-600411-0	0-600411-0	0-600411-0	0-600411-0	0-600411-0	0-600411-0	0-600403-0	0-600403-0	0-600456-0	0-600456-0	0-600455-0
70mm <sup>2</sup> Cu (19/2.14) (10.70mm)						1-275187-5 Copper	1-275187-5 Copper	0-600403-0	0-600403-0	1-275187-7 Copper	1-275187-7 Copper	0-600403-0	0-600456-0	3-275187-9 Copper	4-275187-0 Copper
19/14 19/083 Cu (10.50mm)							1-275187-5 Copper	0-600403-0	0-600403-0	1-275187-7 Copper	1-275187-7 Copper	0-600403-0	0-600447-0	3-275187-9 Copper	4-275187-0 Copper
KUTU/ FERRET (9.00mm)								0-602283-0	0-602283-0	0-602283-0	0-602283-1	0-602283-1	0-602283-1	0-602283-1	0-602283-1
FLOURINE (9.00mm)									0-602283-0	0-602283-0	0-602283-1	0-602283-1	0-602283-1	0-602283-1	0-602283-1
19/16 19/064 Cu (8.13mm)										0-277060-1 Copper	0-277060-1 Copper	0-602283-1	0-602283-1	0-277060-2 Copper	0-277060-2 Copper
35mm <sup>2</sup> Cu (7.65mm)											0-277060-1 Copper	0-602283-1	0-602283-1	277060-2 Copper	277060-2 Copper
GOPHER/POKO (7.08mm)												0-602283-1	0-602283-3	0-602283-3	0-602283-3
SQUIRREL (6.33mm)													0-602283-3	0-602283-3	0-602283-3
7/14 7/080 Cu (6.33mm)														0-277060-3 Copper	0-277060-3 Copper
7/16 7/064 Cu (4.88mm)															0-277060-4 Copper

**NOTE: WHEN JOINING ALUMINIUM TO COPPER ENSURE THE ALUMINIUM CONDUCTOR IS ALWAYS AT THE TOP OF THE CONNECTION. THEN APPLY CORRECT GELPACT COVER**

